Australian Standard®

Methods of testing raw materials for producing urea-formaldehyde foam thermal insulation

Method 2: Determination of the viscosity of the resin

1 SCOPE This Standard sets out the method for determining the viscosity of urea-formaldehyde resin supplied to producers of urea-formaldehyde foam for thermal insulation. It does not provide a specification of the viscosity.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

1886 Glossary of terms relating to plastics

2352 Glossary of terms for thermal insulation of buildings

BS

3900 Methods of test for paints
Part A6: Determination of flow time by use of flow cups

3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 1886 and AS 2352 apply.

4 APPARATUS The following apparatus is required:

(a) B2 brass flow cup type 005 complying with BS 3900:Part A6, for diluted resin.

(b) Cup stand.

(c) Orifice plug for each cup.

(d) Stopwatch.

(e) Beaker, 100 mL capacity.

(f) Water bath at 25 ±1°C.

(g) Thermometer.

5 TEST SAMPLE The test sample shall be approximately 40 mL of resin solution prepared to have the same content used in producing urea-formaldehyde foam for thermal insulation.

6 PROCEDURE The procedure shall be as follows:

(a) Immerse the resin sample, enclosed in a screw-topped bottle, and the flow cup in the water bath for 2 h, or until the resin sample has reached a temperature of 25°C. Dry the cup thoroughly, plug it, clamp it into the stand, and place the beaker beneath the cup. Pour the resin sample into the cup until it runs into the overflow.

(b) Unplug the orifice so that the resin sample flows into the beaker, and start the stopwatch immediately. Stop the watch when the first drip of resin appears, i.e. when the flow becomes discontinuous.

(c) Repeat the procedure for two further samples of resin.

NOTE: As the flow of these resins may be non-Newtonian, it is theoretically unsound to convert the flow-times to absolute units of viscosity.